

DETAILED ACTION

Claim Objections

Claim 7 is objected to because of the following informalities: The phrase "and the portion of the unitary interlayer lining the opening through the second sheet of glass" is confusing and should be reworded. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 6, 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vornholt and Thoren (EP 340089) in view of Bennison et al. (WO 9958334). Vornholt illustrates in Figure 2 (and in col. 3, line 5- col. 5, line 5) a glazing system comprising:

- A unitary polymer interlayer (6, which includes 6', 6" and 6''') sandwiched between and bonded to the first and second sheets of glass with a portion (13) of the interlayer (6) extending into and lining the opening within the first sheet of glass. The examiner notes that the polymer layer is unitary. Figure 2 is a cross sectional view taken along a line in Figure 1. Figure 1,

Art Unit: 3635

in plan view shows the polymer layer being transversely unitary across the section

- A first (5) and second (4) sheet of glass with each sheet having a first and second surface with the first sheet (5) having an opening;
- A receptor (10) for attachment means having an open end and a second end with the receptor extending through the opening and surrounded by the unitary interlayer (13);
- An attachment means (11) where the receptor (10) is adhesively bonded to the first sheet of glass (5) by the polymer interlayer (6) such that the receptor (10) is positioned to mechanically accept the attachment means (11).

However Vornholt does not teach the properties of the interlayer material and composition. Bennison discloses on Page 3, lines 34, an interlayer comprising:

- A thermoplastic polymer composition having a Storage Young's Modulus of 100-1,000 Mpa;

And an interlayer consisting of:

- A water insoluble salt of a copolymer of ethylene and methacrylic acid or acrylic acid containing 14-28% by weight of acid and having about 20-60% by weight of the acid neutralized with sodium, zinc, or magnesium ion and the ionomer resin having a melt index of about 0.5 – 50.

Art Unit: 3635

The examiner notes that Bennison also uses the disclosed interlayer material as a glazing system as bonding interlayer between two layers of glass. It would have been obvious to one having ordinary skill in the art at the time of invention to modify the direct-point attachment glazing system of Vornholt with the interlayer of Bennison in order to maintain the integrity of the laminate after sustaining repeated or prolonged stress after glass breakage (Abstract of Bennison).

Regarding claim 6, Vornholt illustrates in Figure 2 the receptor (10) having an annular lip (formed by the gap in the 6" layer) at its second end and having the lip surrounded by the unitary layer (6' and 6''').

Regarding claim 9, Vornholt does not distinctly teach the opening in the glass and receptor being tapered, however it would have been obvious to one having ordinary skill in the art at the time of invention to have the opening and receptor be tapered as a matter of design choice, since the applicant does not disclose that it performs better or produces any unexpected results and it appears that the system would perform equally as well without the objects being tapered.

Claims 7-8, 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vornholt and Thoren (EP 340089) in view of Bennison et al. (WO 9958334) as applied to claims 1, 6, 9 above, and further in view of Hey Rene (FR 2732730). It is described above what is disclosed by Vornholt in view of Bennison, however regarding claim 7,

Art Unit: 3635

neither reference teaches having an opening within the second sheet of glass. Rene illustrates in Figure 1 a second glass sheet (16) having an opening which is coaxial with the opening in the first glass sheet (14) with a portion on the interlayer (28) extending into and lining the opening. When Vornholt in view of Bennison is modified by Rene, the receptor of Vornholt (10) would extend into the second glass sheet opening. It would have been obvious to one having ordinary skill in the art at the time of invention to have modified the system of Vornholt in view of Bennison with the second opening of Rene in order to further secure the two sheet of glass together better. Instead of having only the polymer be attaching the two sheets together the attachment means (11) would add further strength to the connection.

Regarding claims 8 and 13, Vornholt illustrates in Figure 2 the receptor (10) having an annular lip (formed by the gap in the 6" layer) at its second end and having the lip surrounded by the unitary layer (6' and 6''').

Regarding claim 11, the references do not distinctly teach the opening in the glass and receptor being tapered, however it would have been obvious to one having ordinary skill in the art at the time of invention to have the opening and receptor be tapered as a matter of design choice, since the applicant does not disclose that it performs better or produces any unexpected results and it appears that the system would perform equally as well without the objects being tapered.

Regarding claim 12, Vornholt illustrates in Figure 3 the second end of the receptor (19) being open.

Response to Arguments

Applicant's arguments with respect to claims 1-15 have been considered but are moot in view of the new grounds of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARK R. WENDELL whose telephone number is

Art Unit: 3635

(571)270-3245. The examiner can normally be reached on Mon-Fri, 7:30AM-5PM, Alt. Fri off, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Chilcot can be reached on (571) 272-6777. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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